

## ABSTRACT

Fluorine-18, fluorine-18-incorporating radiopharmaceuticals (FRPs), and other positron-emitting isotopes and radiopharmaceuticals have been used for diagnostic purposes in positron emission tomography (PET). This invention describes the therapeutic use of positron-emitting radiopharmaceuticals such as FRPs primarily, but not exclusively, for the treatment of cancer and cancer-related illnesses. The radiopharmaceuticals are administered in dosages significantly higher than those used for diagnostic imaging.